1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{8}{7} + \frac{4}{9}x > \frac{9}{6}x - \frac{8}{3}$$

A. (a, ∞), where $a \in [-5.25, -3]$

B. (a, ∞), where $a \in [0.75, 6.75]$

C. $(-\infty, a)$, where $a \in [-4.5, -0.75]$

D. $(-\infty, a)$, where $a \in [1.5, 7.5]$

E. None of the above.

2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-10x - 10 \geq 8x - 8$$

A. $(-\infty, a]$, where $a \in [-0.63, -0.05]$

B. $(-\infty, a]$, where $a \in [-0.05, 0.13]$

C. $[a, \infty)$, where $a \in [-0.03, 0.27]$

D. $[a, \infty)$, where $a \in [-0.23, -0.1]$

E. None of the above.

3. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No more than 7 units from the number 6.

A. $(-\infty, -1] \cup [13, \infty)$

B. $[-1, 13]$

C. $(-1, 13)$

D. $(-\infty, -1) \cup (13, \infty)$

E. None of the above

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4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 - 7x \le \frac{-59x - 3}{9} < 5 - 8x$$

A. $(a, b]$, where $a \in [12.75, 18.75]$ and $b \in [-8.25, -2.25]$

B. $[a, b)$, where $a \in [13.5, 16.5]$ and $b \in [-9, 2.25]$

C. $(-\infty, a] \cup (b, \infty)$, where $a \in [12, 15.75]$ and $b \in [-6, 0.75]$

D. $(-\infty, a) \cup [b, \infty)$, where $a \in [13.5, 16.5]$ and $b \in [-6.75, -1.5]$

E. None of the above.

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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-7}{5} + \frac{3}{8}x \le \frac{8}{7}x - \frac{8}{3}$$

A. $[a, \infty)$, where $a \in [-0.75, 3.75]$

B. $[a, \infty)$, where $a \in [-5.25, 0]$

C. $(-\infty, a]$, where $a \in [-4.5, 0.75]$

D. $(-\infty, a]$, where $a \in [-1.5, 9]$

E. None of the above.

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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 + 7x > 8x \text{ or } -3 + 7x < 9x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [0, 5.25]$ and $b \in [3.75, 13.5]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-8.25, -4.5]$ and $b \in [-2.25, 4.5]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-1.5, 3.75]$ and $b \in [5.25, 8.25]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-9.75, -5.25]$ and $b \in [-2.25, 1.5]$

E. $(-\infty, \infty)$

---

7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3 + 3x < \frac{35x + 5}{5} \le 4 + 6x$$

A. $(-\infty, a] \cup (b, \infty)$, where $a \in [-2.25, 0.75]$ and $b \in [-1.5, 3.75]$

B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-1.65, 0.15]$ and $b \in [2.25, 9]$

C. $[a, b)$, where $a \in [-4.2, 0.67]$ and $b \in [-1.5, 6]$

D. $(a, b]$, where $a \in [-5.25, 0]$ and $b \in [1.5, 6]$

E. None of the above.

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8. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

Less than 7 units from the number -2.

A. $(-\infty, -9] \cup [5, \infty)$

B. $(-\infty, -9) \cup (5, \infty)$

C. $(-9, 5)$

D. $[-9, 5]$

E. None of the above

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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$5 + 3x > 5x \text{ or } 6 + 7x < 8x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-1.5, 3.75]$ and $b \in [1.5, 9.75]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-8.25, -1.5]$ and $b \in [-3.75, 0.75]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-0.75, 3.75]$ and $b \in [3.75, 6.75]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.5, -1.5]$ and $b \in [-3.75, 0.75]$

E. $(-\infty, \infty)$

10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$4x - 3 \geq 9x - 6$$

A. $[a, \infty)$, where $a \in [-0.56, 1.55]$

B. $[a, \infty)$, where $a \in [-0.75, -0.54]$

C. $(-\infty, a]$, where $a \in [-1.4, 0.2]$

D. $(-\infty, a]$, where $a \in [-0.2, 4.4]$

E. None of the above.

11. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-6}{2} - \frac{6}{6}x \geq \frac{9}{5}x + \frac{3}{4}$$

A. $[a, \infty)$, where $a \in [0, 3.75]$

B. $[a, \infty)$, where $a \in [-2.25, 0]$

C. $(-\infty, a]$, where $a \in [-3, 0.75]$

D. $(-\infty, a]$, where $a \in [0.75, 3]$

E. None of the above.

12. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3x - 7 \le 5x + 3$$

A. $(-\infty, a]$, where $a \in [-2.5, -1]$

B. $(-\infty, a]$, where $a \in [0.8, 1.5]$

C. $[a, \infty)$, where $a \in [-4.25, -0.25]$

D. $[a, \infty)$, where $a \in [1.25, 10.25]$

E. None of the above.

---

13. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No less than 8 units from the number 5.

A. $(-\infty, 3) \cup (13, \infty)$

B. $(3, 13)$

C. $(-\infty, 3] \cup [13, \infty)$

D. $[3, 13]$

E. None of the above

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14. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 - 8x < \frac{-23x + 6}{4} \le 3 - 7x$$

A. $[a, b)$, where $a \in [-2.25, 6.75]$ and $b \in [-3.75, 0.75]$

B. $(-\infty, a] \cup (b, \infty)$, where $a \in [0.75, 5.25]$ and $b \in [-1.72, 0.9]$

C. $(-\infty, a) \cup [b, \infty)$, where $a \in [0.75, 4.5]$ and $b \in [-6, 0.75]$

D. $(a, b]$, where $a \in [-0.75, 4.5]$ and $b \in [-1.95, -0.67]$

E. None of the above.

15. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-5}{2} - \frac{7}{6}x \geq \frac{-5}{3}x - \frac{8}{7}$$

A. $(-\infty, a]$, where $a \in [-6, 2.25]$

B. $[a, \infty)$, where $a \in [1.5, 3]$

C. $(-\infty, a]$, where $a \in [1.5, 3.75]$

D. $[a, \infty)$, where $a \in [-8.25, 2.25]$

E. None of the above.

16. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 + 8x > 11x \text{ or } 4 + 7x < 8x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.75, 0.75]$ and $b \in [3, 6]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.5, -3.75]$ and $b \in [-2.25, 3]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.77, -2.7]$ and $b \in [2.17, 3.67]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3.52, -1.43]$ and $b \in [3.6, 4.42]$

E. $(-\infty, \infty)$

17. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-6 + 8x < \frac{61x + 6}{7} \leq -8 + 6x$$

A. $(-\infty, a] \cup (b, \infty)$, where $a \in [8.25, 13.5]$ and $b \in [1.5, 5.25]$

B. $(a, b]$, where $a \in [9, 12]$ and $b \in [2.25, 6.75]$

C. $(-\infty, a) \cup [b, \infty)$, where $a \in [6.75, 10.5]$ and $b \in [0.75, 5.25]$

D. $[a, b)$, where $a \in [8.25, 12]$ and $b \in [0.75, 5.25]$

E. None of the above.

18. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

Less than 2 units from the number -5.

A. $(-\infty, -7] \cup [-3, \infty)$

B. $[-7, -3]$

C. $(-\infty, -7) \cup (-3, \infty)$

D. $(-7, -3)$

E. None of the above

19. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-9 + 9x > 11x \text{ or } 9 + 7x < 8x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6, -1.5]$ and $b \in [5.25, 12]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6.75, -3.75]$ and $b \in [5.25, 12]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-12, -7.5]$ and $b \in [0, 7.5]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-13.5, -6.75]$ and $b \in [0, 6]$

E. $(-\infty, \infty)$

20. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$4x - 9 \le 7x - 5$$

A. $(-\infty, a]$, where $a \in [-0.67, 6.33]$

    B. $(-\infty, a]$, where $a \in [-7.33, 0.67]$

    C. $[a, \infty)$, where $a \in [-1.7, 1]$

    D. $[a, \infty)$, where $a \in [0, 4.5]$

    E. None of the above.

21. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{9}{6} - \frac{3}{7}x \le \frac{5}{9}x - \frac{10}{4}$$

    A. $[a, \infty)$, where $a \in [3, 6]$

    B. $(-\infty, a]$, where $a \in [-4.5, -2.25]$

    C. $(-\infty, a]$, where $a \in [3, 4.5]$

    D. $[a, \infty)$, where $a \in [-5.25, -3]$

    E. None of the above.

22. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3x + 6 \ge 5x + 3$$

    A. $[a, \infty)$, where $a \in [-0.4, -0.28]$

    B. $[a, \infty)$, where $a \in [0.07, 1.44]$

    C. $(-\infty, a]$, where $a \in [-0.2, 0.56]$

    D. $(-\infty, a]$, where $a \in [-1.11, 0.15]$

    E. None of the above.

23. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No more than 8 units from the number 3.

A. $(-5, 11)$

B. $(-\infty, -5] \cup [11, \infty)$

C. $[-5, 11]$

D. $(-\infty, -5) \cup (11, \infty)$

E. None of the above

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24. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$3 - 7x < \frac{-33x + 3}{6} \le 5 - 6x$$

A. $(a, b]$, where $a \in [-1.5, 3]$ and $b \in [7.5, 11.25]$

B. $(-\infty, a] \cup (b, \infty)$, where $a \in [-0.75, 2.25]$ and $b \in [6, 12.75]$

C. $(-\infty, a) \cup [b, \infty)$, where $a \in [0, 6]$ and $b \in [6, 11.25]$

D. $[a, b)$, where $a \in [0, 4.5]$ and $b \in [8.25, 12]$

E. None of the above.

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25. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{6}{3} + \frac{3}{4}x \ge \frac{9}{7}x + \frac{8}{6}$$

A. $(-\infty, a]$, where $a \in [0, 2.25]$

B. $(-\infty, a]$, where $a \in [-4.5, 0.75]$

C. $[a, \infty)$, where $a \in [0, 2.25]$

D. $[a, \infty)$, where $a \in [-2.25, 0.75]$

E. None of the above.

---

26. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5 + 8x > 11x \text{ or } 6 + 3x < 4x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-12, -5.25]$ and $b \in [-3.75, 3.75]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.25, -0.75]$ and $b \in [3.07, 7.27]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3, 0.75]$ and $b \in [5.25, 9]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6.75, -3.75]$ and $b \in [-0.75, 2.7]$

E. $(-\infty, \infty)$

27. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 + 3x < \frac{30x + 4}{4} \leq 3 + 7x$$

A. $[a, b)$, where $a \in [-3, -0.75]$ and $b \in [3, 6.75]$

B. $(a, b]$, where $a \in [-2.92, -0.38]$ and $b \in [-1.5, 7.5]$

C. $(-\infty, a) \cup [b, \infty)$, where $a \in [-9.75, -0.75]$ and $b \in [0.75, 5.25]$

D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-1.5, 0.38]$ and $b \in [3, 9.75]$

E. None of the above.

28. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No more than 2 units from the number 7.

A. $(-\infty, -5) \cup (9, \infty)$

B. $[-5, 9]$

C. $(-\infty, -5] \cup [9, \infty)$

D. $(-5, 9)$

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E. None of the above

29. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$4 + 4x > 6x \text{ or } 9 + 6x < 7x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [1.5, 6.75]$ and $b \in [8.25, 11.25]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-14.25, -3.75]$ and $b \in [-7.5, 0.75]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [0, 3]$ and $b \in [6.75, 11.25]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-11.25, -3]$ and $b \in [-4.5, -0.75]$

E. $(-\infty, \infty)$

30. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5x - 10 > 10x - 9$$

A. (a, ∞), where $a \in [-0.02, 0.1]$

B. (a, ∞), where $a \in [-0.09, -0.05]$

C. $(-\infty, a)$, where $a \in [-0.08, 0.04]$

D. $(-\infty, a)$, where $a \in [0, 0.47]$

E. None of the above.

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